E

PRINTER RUSH
(PTO ASSISTANCE)

Application : 09/743,305 **Examiner :** Tom Y. Lu **GAU :** 2621

From: BLM **Location:** (IDC) FMF FDC **Date:** 3-22-05

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[RUSH] **MESSAGE:** Please supply specification pages 3 and 5 of the original specification. (1-8-01)

BLM

[XRUSH] **RESPONSE:** Corrected

Richard Mayer 212-425-7200 **INITIALS:** RS

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

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capture only the visible part of the interior in a second process step. Thus it is not necessary for the images of the interior and the surrounding area to be separated in processing terms, which means the processing unit in which the image data is evaluated does not have to be especially powerful. Herein, it is particularly advantageous to carry out the switching over between capturing the part of the surrounding area visible to the camera and capturing the part of the interior visible to the camera via an electro-optical light valve, in particular via a liquid crystal cell, which can be switched back and forth between a transparent mode and an absorptive mode based on a signal applied.

Furthermore, it is advantageous when switching back and forth between capturing image signals from the surrounding area and image signals from the interior to switch back and forth as soon as partial areas of the maximum area that can be captured by the camera device have been captured. In particular, switching back and forth may be carried out after image columns or image rows have been captured or after groups of pixels have been captured. As the image data also has to be transmitted to the processing unit and processed there, this method has the advantage that it allows quicker switching back and forth between capturing the interior and the exterior, so that the shift between two captured images, e.g., of the exterior, which is based on the movement of the vehicle, is reduced.

Furthermore, it is advantageous to capture the driver's face, in particular his eyes, as well as the road markings and, respectively, the position of the vehicle relative to the road markings; this is because this information can be used to determine whether the driver may have fallen asleep and may therefore be driving in an uncontrolled manner, and can be used to activate a warning device which wakes up the driver. Thus, because the driver's face is also captured, additional safety compared to the related art, in which a camera device

the seat is unoccupied, and injury to a child by an airbag can be prevented if the seat is occupied by a child seat.

Furthermore, it is advantageous to also capture the lip movements of a predefinable person in the vehicle, preferably the driver, in order to support a speech input system. If, for example, during speech input it is unclear which command has been input due to driving noise, the driver's lip movements can be captured by the camera device and evaluated so as to check the speech input. This is possible, for example, if the lip movements are analyzed to determine whether the syllables that correspond to the lip movements captured are contained in the command understood by the speech input unit. If the speech input unit cannot make unambiguous assignments based on what it has understood, this can possibly be achieved by carrying out a comparison with the lip movements.

Furthermore, it is advantageous to provide a device so as to allow capturing of the area surrounding the vehicle and of the vehicle interior. In particular, it is advantageous to design a camera device so that one beam path points in the direction of the interior and one beam path points in the direction of the road, preferably in the direction of travel, because as a general rule from the driver's point of view the road, i.e., the edge of the road, and objects in his own lane are the most important information in the area surrounding the vehicle.

Furthermore, it is advantageous to provide a deviation mirror that is semi-transparent in the camera device. One beam path, e.g., from the interior, may enter the camera device via reflection, and another beam path may enter via transmission through the semi-transparent mirror. As a result, there is no need for mechanical adjusting between the two beam paths. Furthermore, it is advantageous to design at least one deviation mirror to be concave or convex; as a result, the area that can be monitored by the camera can be limited or enlarged, depending on the use of the device.